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MEDICAL INSTALLATIONS IN GÖTTINGEN AREA

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[1945]

COMBINED INTELLIGENCE OBJECTIVES
SUB-COMMITTEE

R E S T R I C T E D

**Installations of Medical Interest in the Göttingen
Area (Germany)**

Reported by

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**CIOB Black List Item
24 Medical**

**Combined Intelligence Objectives Sub-Committee
G-2 Division, SHAEF (Rear) APO 413**

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Personnel of Team

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INSTALLATIONS OF MEDICAL INTEREST IN THE GÖTTINGEN AREA (GERMANY)

I. INTRODUCTION:

The party departed from Paris by special airplane on 19 April 1945, cleared through 12th Army Group at Verdun and arrived in Göttingen late in the afternoon of the same day. Adequate transportation was furnished at the airfield by 172nd Security guard (1st Army), which organization also provided quarters and messing facilities. The hospitality accorded the team was later continued by the 8th Armored Division (9th Army) which assumed control of the area. Both organizations were exceedingly cooperative in affording every facility at their command for the furtherance of the activities of the team.

The following installations were visited during the period, 19 to 27 April 1945.

- (1) Hygienisches Institut
Ludendorffing 57
Director: Prof. Dr. F. Schütz
- (2) Medizinische Klinik und Poliklinik
Kirchweg 1,
Director: Prof. Dr. R. Schoen
- (3) Klinik für Haut und Geschlechtskrankheiten
Steinsgraben 19
Director: Prof. Dr. W. Krantz
- (4) Institut für Pflanzenbau
Nikolausbergerweg 9
Director: Prof. Dr. phil. O. Tornau
- (5) Tierärztliches Institut
Groner Landstrasse 2
Director: Prof. Dr. med. vet. S. Schermer
- (6) Städtischer Schlachthof, Göttingen
- (7) Gerichtlich-Medizinisches Institut
Geiststrasse 7
Director: Prof. Dr. G. Jungmichl
- (8) Pharmakologisches Institut
Geiststrasse 9
Director: Prof. Dr. E. Frey.

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- (9) Physikalische Werke (Phywe)
- (10) Winkel-Zeiss Optische Werke
- (11) Sartorius, A.G. Weender Landstrasse 96-98
- (12) Schneider Optische Werke, Weende.

Upon completion of the mission, the party proceeded by air on the 27 April to their respective stations arriving on the afternoon of 28 April. Documents collected at Göttingen were forwarded through proper channels in accordance with C.I.O.S. instructions.

I. HYGIENISCHES INSTITUT (HYGIENIC INSTITUTE)

A general survey of the building was conducted by Prof. Schütz. The institute was found to be a commodious structure in a good state of repair, embracing many laboratory rooms, adequate office space, and sufficient housing space for the care and propagation of small experimental animals; other miscellaneous outbuildings also were present. Interrogation of the director revealed that the principal activities of the institute embraced those of teaching, clinical pathology, and medical research. At the time of the visit, the staff consisted of 5 medical officers all of whom were in uniform. The director, Prof. Schütz, held the rank of Colonel.

Statistics covering the prevalence of communicable diseases which occurred in Wehrkreis XI in 1944 are listed below. This Wehrkreis supports a population of approximately 4 million persons of which about 20 percent were military personnel. (Figures include civilian and military personnel).

Diphtheria	24000 cases 1056 deaths
Scarlet Fever	19838 cases 189 deaths
Tuberculosis	7397 cases (5 - 10% bovine) 3010 deaths
Typhoid Fever	1064 cases 92 deaths
Typhus Fever	890 cases 102 deaths

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The following diseases transmissible both to man and animals were reported in relative terms:

Rabies - none
Encephalomyelitis - none
Encephalitis (postvaccinal only) - few cases
Anthrax - none
Botulism - none
Hepatitis - few
Brucellosis - a few cases of Bangs type
Salmonellosis - none
Dysentery, bacillary - few (Flexner and Sonne Type)
Smallpox - none
Amebic dysentery - none
Tetanus - few cases
Foot and mouth disease - very little
Blackleg - none in this area.

Copies of reprints indicating the research which has been carried on at this institute as well as records of current problems are included along with the other documents forwarded to the CIOS. At the time of the visit the principal research problem was that of determining the serological relationship between Proteus X19 and Rickettsia prowazekii. This work is being conducted in collaboration with the Institute of Biochemistry of the University under the direction of Otto Westphal. It was suggested by Schütz that their research in this field might lead to the development of a vaccine by the fractionation of Proteus X19.

One report may be summarized in essence as follows:

The antibody responsible for the Weil-Felix reaction (WF antibody) was prepared in serologically pure form from the serum of typhus fever convalescents by means of specific methods. Solutions of the WF antibody showed good agglutination effects on Bact. proteus X19. On the other hand, in comparable concentrations rickettsiae were not agglutinated. A theory of the genesis of the WF antibody is presented which takes into account this observation as well as Castaneda's results. It was possible to isolate from rickettsia the complete antigen which leads to the formation of the WF antibody in typhus fever serum. Attention is called to the possible therapeutic significance of the WF antibody in typhus fever. It is not improbable that the WF antibody exercises the functions of an antitoxin. From this point of view the influence

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of immunization with Proteus XI9 or with the corresponding Proteus complete antigen (X Factor) on the course of typhus fever in man should be tested once more.

Most noteworthy in the way of equipment was an ultracentrifuge manufactured by Phywe in Göttingen which it was stated, was air driven in vacuum, does not necessitate a CO₂ cooling system, and is capable of 40,000 RPM. Three complete instruments of this type are available in Göttingen. Also of interest was a special type filter used for determining the actual number of coliform organisms in a specified quantity of water. After filtration the membranous filter is removed under sterile conditions and placed on E.M.B. or Endo-plates. After incubation the number of colonies or clumps of organisms can be determined directly from the presence of the organisms as indicated by the usual color reaction. This filter is called "Membranfilter" and is manufactured by the Sartorius-Werke, A.G. and Co, Göttingen, Weender Landstrasse, 96-98. Two specimens of this apparatus were acquired from the manufacturer. One sample was forwarded to the CIOS; the other was submitted to the 1st Medical General Laboratory ETOUSA.

Comments: As far as this team could ascertain no projects of immediate practical application to problems of military medicine were being pursued at this time. Mention should be made of the fact that this institute with its housing and laboratory facilities would lend itself admirably to the activities of an Army General Laboratory.

III MEDIZINISCHE KLINIK (MEDICAL CLINIC)

An interview with the director Prof. Schoen, director of the Klinik uncovered several items of interest. Mention of a new sulfonamide "Badional" which had been tested in his clinic during the last year. This preparation is manufactured by the I.G. Farbenindustrie in Höchst and was submitted to him for clinical trial. Prof. Schoen seemed very well pleased with this agent and said it was better tolerated than any of the sulfonamides he knew. He was not familiar with the chemical structure of the compound but provided the interrogators with a copy of a monograph on Chemotherapy by Domagk which appeared in 1944 and contains the essential chemical and clinical data of all the sulfa drugs used in Germany. This monograph has been forwarded to the CIOS.

One of the three cases of typhus existing in the city at the time of this visit was under Prof. Schoen's care and was seen by the investigators. The professor maintained that the treatment was purely symptomatic plus good nursing. He also said that no new therapeutic agents had been developed for the use in typhus fever. Questioned in regard to malaria he stated that atabrine and plas-

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mochin were still the standard drugs. He mentioned Schulemann and Kikuth (both of I.G. Farbenindustrie, Elberfeld) as possible sources of information concerning antimalarial compounds. (Note : Both have been interviewed subsequently).

IV KLINIK FÜR HAUT UND GESCHLECHTSKRANKHEITEN. (V.D. AND SKIN CLINIC)

Prof. Krantz was interrogated concerning his work and that of his hospital but no information worth recording was obtained. It was felt that methods of treatment of syphilis in use corresponded to those long since discarded by the medical profession in the United States.

V. INSTITUT FÜR PFLANZENBAU (AGRICULTURAL INSTITUTE)

This institution was visited and Prof. Tornau interrogated with the view to ascertaining the present status of animal industry and forage. It was learned that on the whole the animal level in Germany had been reduced as compared with peacetime conditions. Poultry and small animals, however, have increased in number; cattle, both dairy and beef type have been reduced approximately 10% and swine reduced from 25 to 50%. At the present time there are about 10 million swine, 5 million sheep and a relatively small number of goats. It was stated that in order to preserve the high level of agricultural production extensive fertilization by use of calcium phosphates, potassium and nitrogen is necessary. The soil in this area was stated to be especially poor in phosphates. The iron industry of Germany can furnish but 1/3 of the necessary phosphates. No powered agricultural machinery is employed at present because of the lack of fuel, tilling being accomplished by the use of horses and cattle. The principal stock feed at present consists of oats and beets during the winter, sometimes beets only; this is augmented by grazing. Occasionally residue from compressed grape seed, barley and potatoes afford sustenance when the above are not available. Hops and malt, the by-products of brewing establishments, are used when available. Owing to the fact that animals are now receiving but a bare maintenance ration, milk production has been decreased. The average daily receipt in the city of Göttingen averages about 15,000 to 20,000 litres. This milk is handled through cooperative dairy centers.

VI TIERÄRZTLICHES INSTITUT (VETERINARY INSTITUTE)

The function of this institute is to teach veterinary science to students of the agricultural faculty of the university. The building and equipment are extremely modest. Dr. Fischer was acting in the capacity of director in the absence of Prof. Schermer who is now a POW. Questioning of Dr. Fischer brought out the fact that

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in the city of Göttingen there were on Dec. 1944: horses, 141; cattle, 77; swine, 259; poultry; 7100. The district harbored: horses, 3128; cattle, 18872; sheep, 13209; swine, 33803; goats, 6905; poultry, 71480; bees, 2095 (hives); rabbits, 27143.

All milk entering the city is passed through a central dairy where it is classified into three categories: consumer milk; drinking milk; and preferred milk.

The consumer and drinking milk contain not less than 2.5 percent butter fat. In the case of consumer milk no bacterial count is required and for the most part it is used for the production of cheese and butter. Drinking milk is the average milk containing not less than 2.5 percent butter fat; it is pasteurized and dispensed for beverage purposes. Pasteurization is accomplished by a flash system which requires that the milk be rapidly heated to 85°C and hold at that temperature for two minutes. Samples of milk are subjected periodically to test by the veterinary department.

"Preferred Milk" is raw and intended for consumption by children. It is derived from stables inspected once each week by government agents. Should the bacterial count exceed 3000 per cc. it is rejected and relegated to the two former grades. Tuberculin testing of cattle is not mandatory, the cattle being subject only to clinical examination. However, the residue from centrifuged milk samples is injected into guinea pigs. In the event that the guinea pig test is positive, the animals are adjudged tuberculous, and advanced cases are slaughtered under veterinary supervision. Cattle for special purposes (breeding or special milk production) are tuberculin tested. Ordinary cattle are only tested upon request by the farmer.

Diseases prevalent in cattle include tuberculosis to the extent of about 10 percent and brucellosis (Bangs') 2 percent. The doctor stated that there are but few cases of foot and mouth disease and that Waldmann's vaccine prepared on the island of Riems is administered to herds when the neighboring cattle surrounding a focus of infection. Infected animals are treated with anti-hoof and mouth disease serum which, he states, is effective. Trichinosis is prevalent. A few cases of glanders were determined during the war, but these cases were said to have been imported from the Eastern Front. As soon as the disease was recognized the animals were slaughtered immediately. The tissues were then rendered under steam pressure and processed into meat-meal. Both the mallein and the complement fixation tests are employed for the diagnosis of this disease.

VII STADTISCHER SCHLACHTHOF (Municipal Abattoir)

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This municipal abattoir was a relatively spacious brick structure built about 60 years ago and possessing primitive equipment. Lighting, both natural and artificial, was inadequate. The floors were of cement and brick. Storage facilities consisted of a precooler maintained at 2°C. and a freezer maintained at 4°C. The main floor was employed for the slaughter of cattle while adjoining sections were for the slaughter, scalding, and dressing of swine. Separate facilities existed for the slaughter of normal horses. It is of interest to note that the drainage from the abattoir was discharged directly and without treatment into the city sewage system. Although the sewage was treated before being discharged into the Leine River, the method of disposal of abattoir wastes creates a potential hazard with respect to the city water supply system. The holding pens were within closed rooms and in a most insanitary state. An administration building was located adjacent to these pens. It also contained a small laboratory the chief activity of which was the microscopic examination of pork diaphragms for the detection of trichina cysts. The method was the usual one used and consisted of pressure of specimens between two plate glasses. Owing to the presence of trichinosis in the area the law demanded that all slaughtered swine be subjected to this test; however, the actual cases of trichinosis appear to be but few. The cycle of the parasite in infected carcasses is broken by cooking or smoking. The method for eliminating viable cysticerci in cattle is refrigeration for a period of 21 days. During the year 1944 a total of 7 cattle out of 2425 slaughtered were retained because of cysticercosis. The disposition of the carcasses showing macroscopic lesions of tuberculosis depends on the degree of dissemination and evidence of metastases. Of the 2425 cattle slaughtered during 1944, 719 animals were found to be infected.

Total slaughter figures of the abattoir in 1944 were as follows:

237 oxen	225 shoats
219 bulls	1396 sheep
1969 cows	17 goats
5242 calves	<u>272 horses</u>
9438 swine	19,015 Total

The manual of Ostertag is followed in making disposition of carcasses in this plant. The plant generally represents a picture of relative antiquity for a city of the size of Göttingen.

VIII. GERICHTLICH * MEDIZINISCHES INSTITUT

This institute was housed in a comparatively new building which was in good state of repair. Laboratories for forensic medicine occupied the ground floor, and apartments for the staff were located

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above. The director, Prof. Jungmichl, was in the army and could not be interrogated. The investigators were shown over the premises by Dr. Mens. In addition to teaching the fundamentals of legal medicine to medical and law students, some research work was done in the field of serology. This work concerned the differentiation of the m and n factor in blood groups. Some work was also being done on the determination of blood alcohol levels, during the course of which it was found that in gastric disease absorption of alcohol through the gastric mucosa was one of the first functions to suffer. In general it can be stated that in this small teaching institution research was being conducted on a very limited scale.

IX. PHARMAKOLOGISCHES INSTITUT (PHARMACOLOGICAL INSTITUTE)

Upon visiting the institute it was found that the director, Prof. Frey, was suffering from a pulmonary abscess and was therefore not available for questioning. However, a survey of the institute was made in company of Dr. Wiedemann, who was Prof. Frey's first assistant. The building may best be characterized as historic. The laboratories were primitive and totally inadequate with respect to equipment, as well as other facilities. Apart from routine teaching of pharmacology and materia medica, very little actual research was being done. Some work on the metabolism of the frog heart under the influence of various drugs (strophantin, acetylcholine, etc.) had been conducted, but no noteworthy results had been obtained. No work had ever been done on chemical warfare or related subjects. Mention was made of a new sulfa drug, Badional (I.G. Farben), which was at present being studied at the medical clinic and which was considered very promising. The informant had no knowledge of the chemical composition of this compound. The library had been evacuated to a salt mine in the neighborhood of Göttingen about a year ago. In summary it can be said that due to the lack of personnel and an increase in the load placed upon the teaching staff very little actual research work was being done.

X. PHYSIKALISCHE WERKE (PHYWE) (PHYSICAL WORKS)

This plant manufacturing instruments for laboratory purposes, was found to be quite extensive as to structure but had suffered considerable damage from a direct bomb hit and fire. The plant was visited mainly for the purpose of acquiring a specimen of the Ultracentrifuge mentioned above. Owing to the disruption of manufacturing facilities by bombing and inability to obtain priorities

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for non-essential apparatus no complete centrifuge was available at the time; however, the director stated that under normal working conditions a specimen could be completed within a period of three months. During the war, this plant was engaged in building an apparatus for determining weather conditions at a high altitude. This work was being done in connection with Siemens in Berlin.

XI WINKEL - ZEISS OPTISCHE WERKE: (WINKEL-ZEISS OPTICAL WORKS)

This spacious and elaborate establishment was engaged in the manufacture of lenses, microscopes and other optical equipment. Among the many items of equipment which were manufactured in this factory was a "Pocket-Polarizing Microscope" with a magnifying power of 60 X. This instrument was used for the detection of rancid butter as well as the identification of margarine and other fats and oils commonly used as diluents or adulterants in butter. This instrument consists of a polarizing microscope magnifying about 60 times. It serves for the preliminary control of butter which when fresh does not contain double refracting crystals, for the identification of margarine or other fats such as cocoanut oil, tallow, lard, hardened oils, etc, which have passed from the melting point to the congealed state and hence have double crystalline refracting properties.

XII. SARTORIUS - WERK A.G. (SARTORIUS PLANT A.G.)

This plant is among the world's foremost manufacturers of precision balances as well as of certain special apparatus for laboratory purposes. The installation was found essentially intact. Two samples of the "Membranfilter" used at the Hygiene Institute for the direct count of coliform organisms in a given amount of water were obtained from this plant. It is conceivable that this piece of equipment might be of considerable value to sanitary engineers and those engaged in water bacteriology. Literature describing the filter was evacuated.

XIII SCHNEIDER OPTISCHE WERKE (SCHNEIDER OPTICAL WORKS).

This modern plant, situated on the northern outskirts of Göttingen was engaged in the production of lenses for cameras, microscopes, binoculars, and other optical instruments. Although intact, the plant was not in operation at this time owing to the temporary lack of power. Of special interest was a camera lens said to be the largest in the world which was ground for aerial photographic purposes. Also of interest was an apparatus used for testing the perfection and accuracy of lenses.

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